Amendments to the Claims

Claims 1-14. (Cancelled).

15. (New) A method of forming silicon atomic force microscope tips including the steps of:

(a) depositing a masking layer onto a first layer of doped silicon so that some square or rectangular areas of the first layer of doped silicon are not covered by the masking layer,

(b) etching pyramidal apertures in the first layer of doped silicon,

(c) removing the masking layer,

(d) depositing a second layer of doped silicon onto the first layer of doped silicon, the second layer of doped silicon being oppositely doped to the first layer of doped silicon,

(e) etching away the first layer of doped silicon.

(f) before the first layer of doped silicon is etched in step (e) performing an anisotropic wet etch on the second layer of silicon to provide at least one raised area,

(g) fusion bonding a third layer of silicon over the raised area to form at least one cavity between the second layer and the third layer,

(h) following the step of etching away the first layer of doped silicon in step (e) depositing a masking layer over the second layer of silicon on the side previously in contact with the first layer of silicon,

(i) patterning the masking layer to include an area of no masking at one side of a tip,

(j) performing a release etch to remove silicon above the cavity not covered by the masking layer, and

(k) removing the masking layer.

16. (New) A method of forming silicon atomic force microscope tips as claimed in claim 15 wherein the third layer of silicon has the same doping as the second layer of silicon.

17. (New) A method of forming silicon atomic force microscope tips including the steps of:

(a) depositing a masking layer onto a first layer of doped silicon so that some square or rectangular areas of the first layer of doped silicon are not covered by the masking layer,

(b) etching pyramidal apertures in the first layer of doped silicon,

(c) removing the masking layer,

(d) depositing a second layer of doped silicon onto the first layer of doped silicon, the second layer of doped silicon being oppositely doped to the first layer of doped silicon,

(e) etching away the first layer of doped silicon.

(f) before the first layer of doped silicon is etched in step (e) performing an anisotropic wet etch on the second layer of silicon to provide at least one raised area,

(g) fusion bonding a third layer of silicon over the raised area to form at least one cavity between the second layer and the third layer,

(h) following the step of etching away the first layer of doped silicon in step (e) depositing a masking layer over the second layer of silicon on the side previously in contact with the first layer of silicon,

(i) patterning the masking layer to include an area of no masking at one side of a tip,

(j) performing a release etch to remove silicon above the cavity not covered by the masking layer, and

(k) removing the masking layer,

wherein the etch in step (e) is an electrochemical etch.

18. (New) A method of forming silicon atomic force microscope tips as claimed in claim 17 wherein the third layer of silicon has the same doping as the second layer of silicon

19. (New) A method of forming silicon atomic force microscope tips including the steps of:

(a) depositing a masking layer onto a first layer of doped silicon so that some square or rectangular areas of the first layer of doped silicon are not covered by the masking layer,

(b) etching pyramidal apertures in the first layer of doped silicon,

(c) removing the masking layer,

(d) depositing a second layer of doped silicon onto the first layer of doped silicon, the second layer of doped silicon being oppositely doped to the first layer of doped silicon,

(e) etching away the first layer of doped silicon.

(f) before the first layer of doped silicon is etched in step (e) performing an anisotropic wet etch on the second layer of silicon to provide at least one raised area,

(g) fusion bonding a third layer of silicon over the raised area to form at least one cavity between the second layer and the third layer,

(h) following the step of etching away the first layer of doped silicon in step (e) depositing a masking layer over the second layer of silicon on the side previously in contact with the first layer of silicon,

(i) patterning the masking layer to include an area of no masking at one side of a tip,

(j) performing a release etch to remove silicon above the cavity not covered by the masking layer, and

(k) removing the masking layer,

wherein the first layer of silicon is p-type doped silicon and the second layer of silicon is n-type doped silicon.

20. (New) A method of forming silicon atomic force microscope tips as claimed in claim 19 wherein the third layer of silicon has the same doping as the second layer of silicon.